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Installation and Operation Manual

ecoair

Room Air Conditioners

Bravo Inverter Range Split Type

DC Inverter

ECO916SD MK2

ECO1216SD MK2

ECO1816SD MK2

ECO2416SD MK2

Register your air conditioner

Model information can be found on the CE label.

Please register your product online at www.ecoair.org. For your future convenience, record the model information below.

MODEL NUMBER

SERIAL NUMBER

PURCHASE DATE

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What's in the box

1 x Bravo Inverter MK2 Indoor Unit

1 x Bravo Inverter MK2 Outdoor Unit

1 x Remote Control

1 x Drain Hose

1 x User Manual

1 x Hole Cover Plate

1 x Drain Joint

4 x Wall Plugs and Screws.

1 set of Copper Pipes

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure they are away from the appliance.

This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

R410A(R32/125: 50/50): 1975

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BS Plug Wiring

Wiring Instructions: Should it be necessary to change the plug please note the wires in the mains lead are coloured in accordance with the following code:

BLUE - NEUTRAL
BROWN – LIVE
GREEN AND YELLOW - EARTH

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

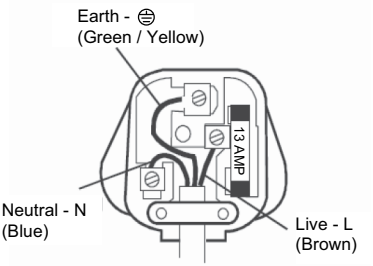
1. The **BLUE** wire is the **NEUTRAL** and must be connected to the terminal which is marked with the letter **N** or coloured **BLACK**.
2. The **BROWN** wire is the **LIVE** and must be connected to the terminal which is marked with the letter **L** or coloured **RED.**
3. The **GREEN/YELLOW** is the **EARTH** and must be connected to the terminal which is marked with the letter **E** or ⏚ or coloured **GREEN** or **GREEN/YELLOW**.
4. Always ensure that the cord grip is positioned and fastened correctly.

If a **13A (BS 1363)** fused plug is used it must be fitted with a **13A** fuse. If in doubt consult a qualified electrician. **(For 9000BTU and 12000BTU unit only.)**

(For 18000BTU use 20A (fuse) supply from the main.)
(For 24000BTU use 32A (fuse) supply from the main.)

Wiring for a 13 Amp Plug (BS1363)

Please note. The Earth Terminal is marked with the letter **E** or ⏚ Earth Symbol.



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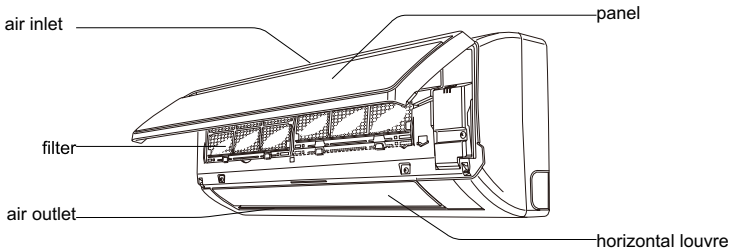
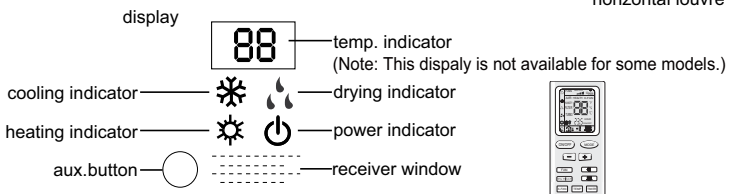
Parts

Indoor Unit

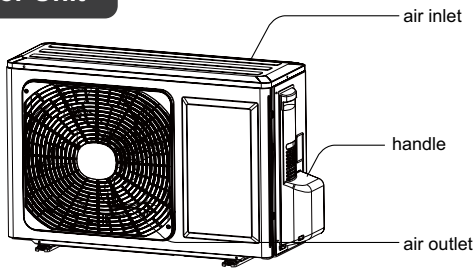




remote control

(Display content or position may be different from above graphics, please refer to actual products)

Outdoor Unit



Notice:

Actual product may be different from above graphics, please refer to actual products.

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Precautions

Warning

- Do not connect the air conditioner to a multi-purpose or extension socket as this could be a fire hazard.
- Always disconnect power supply when cleaning the air conditioner. This could cause electric shock.
- Do not spray water on the indoor unit as it will likely cause electric shock or malfunction.
- Keep the remote control in a dry place. Water will cause malfunction.
- Do not attempt repairs to your air conditioner. This is likely to cause electrical damage. Please contact your dealer.
- Do not block air outlet or air inlet as this may cause malfunction.
- If you need to relocate your unit consult and employ a qualified person. Personal injury or damage could occur if these actions are not taken.
- Do not step on the top panel of the out door unit, or place heavy objects. This could cause damage or personal injury.
- Do not put your fingers or objects into either air inlet or air outlet openings. This may cause personal injury or damage.
- Your airconditioner should be correctly earthed. Incorrect earthing could cause electric shock and personal injury.
- Do install the correct circuit breaker, if not personal injury and malfunction could occur.
- Installation and maintenance must be performed by qualified professionals. Failure to do so could cause personal injury or damage.

Working temperature range

- The operating temperature range (outdoor temperature) for cooling only unit is 18℃ ~ 43℃; for heat pump unit is -10℃ ~ 43℃.

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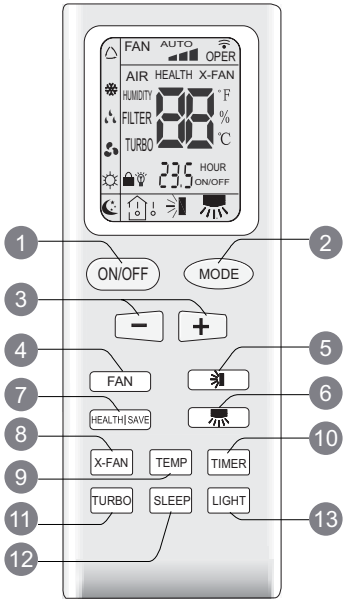
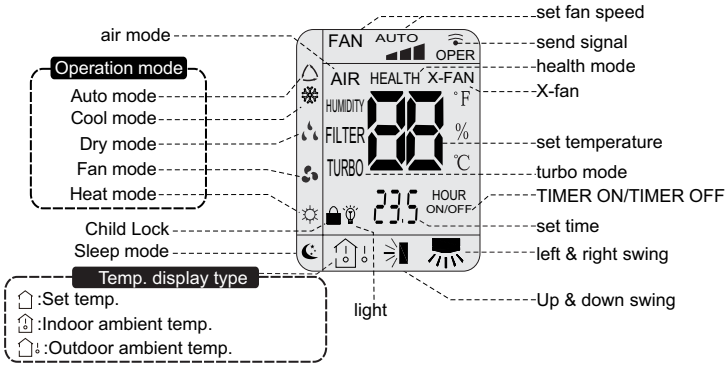
Buttons on the remote control



1. ON/OFF button
2. MODE button
3. +/- button
4. FAN button
5. button
6. button
7. HEALTH|SAVE button
8. X-FAN button
9. TEMP button
10. TIMER button
11. TURBO button
12. SLEEP button
13. LIGHT button

Introduction to icons on the display screen



Some functions are omitted from some units.

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Introduction to buttons on the remote control

Note:

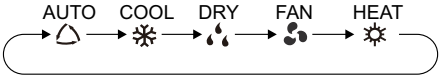
- You can operate the air conditioner through the remote control.
- At ON status, each selected pressing button on remote control, the signal icon "((•))" on the remote control will flash once. The air conditioner will give out a sound, which indicates the signal has been sent to the air conditioner.
- At OFF status, the display screen on remote control displays set the temperature. At ON status the display screen on the remote control on displays the corresponding startup function's icon.

1 ON/OFF button

Press this button to turn on or turn off the air conditioner. After turning on the unit with operation indicator "⏻" the indoor unit is ON (this will show a green indicator. Colour may be different for different models). Note that the unit will also make a sound to confirm this status.

2 MODE button

Press this button and you can select your required operation mode.



- After selecting auto mode,the air conditioner will operate automatically according to the ambient temperature. The temperature cannot be adjusted or displayed in this mode. Press the "FAN" button toadjust the fan speed. Press " " button and " " button to adjust the swing angle.
- After selecting cool mode, the air conditioner operates in cool mode. The indicator "❄" is on indoor unit is ON. You can press the "+" or "-" button to adjust or set the . temperature Press the "FAN" button to adjust the fan speed. Press " " button and " " button to adjust swing angle.
- After selecting dry mode, the air conditioner operates a low speed. Dry indicator "💧"will show when the unit is ON. In dry mode, the fan speed cannot be adjusted. Press " " button and " " button to adjust the swing angle.
- After selecting fan mode, the air conditioner operates solely in this mode. All mode indicators on the indoor unit will show OFF, operation will show ON. Operation indicator will show ON. Pressing the "FAN" button can adjust fan speed. Press "" button and "" button can adjust the swing angle.
- After selecting heat mode, the air conditioner operates in this function. Heat indicator "☼" will show when the unit is ON. You can press the "+" or "-" button to adjust or set temperature.
  Press the "FAN" button to adjust fan speed. Press " " button and " " button to adjust the swing angle

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Note:

For preventing cold airflow, after starting up the heating mode, the indoor fan will blow for a period of 1-5min. (This time is determined by indoor ambient temperature)
There is a range of temperature for you to select (from 16℃ to 30℃ degrees) on your remote control for your selection. Fan speed too can be adjusted to Auto, Low, Medium or High at your choice.

3 "+" or "-" button

- After each pressing of "+" or "-" button, you can increase or decrease the set temperature by 1℃. Hold "+" or "-" button, for 2s and the set temperature on remote control will change more quickly. The temperature indicator on the indoor unit will also change accordingly. (Note that temperature can't be adjusted in auto mode)

- In TIMER ON, TIMER OFF or Clock setting, you can press the "+"or "-" button to adjust the time. (Refer to TIMER button for details)

4 FAN button

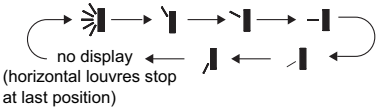
Pressing this button can set the fan speed as: auto (AUTO), low(◢),medium (◢◢), high(◢◢◢).

Note:

- Under AUTO speed the unit will adjust the fan speed to (high, medium or low speed) according to the ambient temperature.
- Fan speed in dry mode will be low speed.

5 button

Press this button to select uboth "up" and "down" swing. The swing angle can be selected in sequence as below:



When selecting " " with the remote control, auto swing will start. The Louvre will swing up and down automatically to the maximum angle.

When selecting " 、 、 、 、 " with remote controller, it's the fixed position with the remote control this is the "fixed position" swing. The Louvre will therefore stop at the position indicated by the icon.

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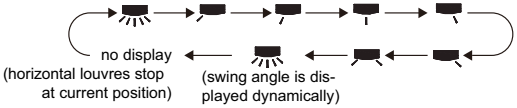
6 button (Optional)

Press this button to select left and right swing. The swing angle can be selected as below:



- When selecting "" with remote control, you engage auto swing. The horizontal louvre of the air conditioner will swing left and right automatically to the maximum angle.
- When selecting "、、、、、" with remote control this is fixed position swing. The horizontal louvre of air conditioner will stop at that position as shown by the icon.
- When selecting " (swing angle is displayed dynamically) " ,this will engage a circulating swing. The horizontal louvre of the air conditioner will swing according to the angle shown by the icon.

7 HEALTH|SAVE button (Optional)

HEALTH FUNCTION:

After pressing the HEALTH button, the remote control will switch circularly as below:
"HEALTH"→"AIR"→"AIR HEALTH"→"no display"

- When selecting "HEALTH" by remote control, HEALTH function will commence.
- When selecting "AIR" by remote control, the AIR function will commence.
- When selecting "AIR HEALTH", the AIR and HEALTH function will commence.
- When there's no display on remote controller, AIR and HEALTH functions will be turned off.
- AIR function is only applicable to selected models.

SAVE function:

In cool mode, press the SAVE button and the unit will operate under in this mode. The remote controller will displays "SE". The unit will now operate on auto speed so the temperature cannot be adjusted. Press the SAVE button if you wish to exit this mode and the unit will return to the original set speed.

- This function is applicable certain models only.

8 X-FAN button (Optional)

After pressing this button in cooling or dry mode, the the remote controller will display the character "X-FAN" when this mode is operational. Press this button again to cancel the X-FAN function.

Note:

- When in X-FAN mode and the unit is turned off the fan will continue to operate for a while at low speed to dry the residual water inside the indoor unit.

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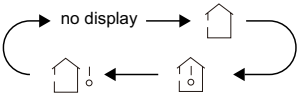
- When in X-FAN mode and you wish to turn the fan off immediately press and hold the X-FAN button.

9 TEMP button

Press this button to see the indoor set temperature, indoor ambient temperature or outdoor ambient temperature on the control panel. The temperature can be set circularly by remote control as below:



- When selecting "" by remote control, the temperature indicator on the indoor unit display the set temperature.
- When selecting "" by remote control, the emperature indicator on the indoor unit will display the indoor ambient temperature.
- When selecting "" by remote control, the temperature indicator on the indoor unit will display the outdoor ambient temperature.

Note:

- Outdoor ambient temperature displays are on selected model only. When the indoor unit receives the " " signal, it will display the indoor set temperature.
- Only for models have this function (those with a dual-8 display).

10 TIMER button

- At the ON status, press the buttin once to set timer. The characters HOUR and OFF will flash. Press "+" or "-" button within 5s can adjust the time of ON. After pressing "+" or "-", time will increase or decrease half an hour. When holding the "+" or "-" button, for 2s more, the time will change more quickly to reach to your required time. After this, press "TIMER" button to confirm it. The character of HOUR and OFF will now not flash again. To cancel TIMER OFF: Press the "TIMER" button to TIMER OFF status.
- In OFF status, press this button again to restart this function. It will then show TIMER ON.

Note:

- Time setting range: 0.5-24 hours.
- Time interval between two operations cannot exceed 5 seconds.

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11 TURBO button

Press this button under cooling or heating mode and the air conditioner will enter a quick cooling or quick heating mode. The character "TURBO" will be displayed on remote control. Press this button again to exit turbo function and the character of "TURBO" will disappeared.

12 SLEEP button

Press this button in either cooling or heating mode and this function will commence. The icon will be displayed on remote control. Simply press this button again to cancel sleep function. " "icon on remote controller will be displayed.

13 LIGHT button

Press this button to turn off the indoor unit's display light. The " " icon on the remote controller will then disappear. Press this button again to turn it back on. The " " icon on remote controller will be reappear.

Summary of "Combination Buttons"

Child lock function

Press "+" and "-" buttons simultaneously to turn on or turn off the child lock function. When the child lock function is on the " " icon will be displayed on the remote control. If the remote control is operated in child lock the " " icon will flash three times but the device will not send a signal.

Switchover function for temperature display

After turning off the unit by remote controller, press "-" button and "MODE" button simultaneously to switch between ℃ and °F .

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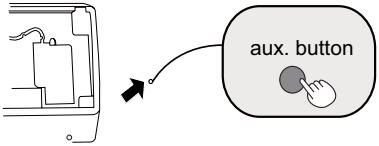
Emergency operation

If the remote control is lost or damaged, please use the auxiliary button to turn on or turn off the air conditioner. (As shown below)
As shown in the fig. Open front panel on the indoor unit, press aux. button to turn the unit on or off. When the air conditioner is turned on, it will operate in auto mode.



Care and Maintenance

Note:

- Turn off the air conditioner and disconnect the power before cleaning to avoid personal injury by electric shock.
- Do not wash the air conditioner with water to avoid personal injury by electric shock.
- Do not use volatile liquids to clean the air conditione

Cleaning the surface of the indoor unit

If the surface of your unit is dirty we recommend that you use a soft dry cloth to clean. A slightly damp cloth could be used for more stubborn dust and dirt.

Note:

- Do not remove the panel when cleaning it.

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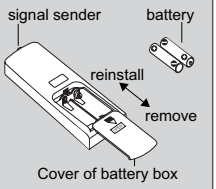
Operation guide

1. After you have connected the unit, press " ON/OFF " button on the remote control to turn the air conditioner on.
2. Press the " MODE " button to select your required mode: AUTO, COOL, DRY, FAN, HEAT.
3. Press "+" or "-" button to set your required temperature. (Temperature can't be adjusted under auto mode).
4. Press " FAN " button to set your required fan speed: auto, low, medium and high speed.
5. Press " ", (on selected models only) or " " button to select fan blowing angle.

Replacement of batteries in remote controll

1. Press and slide the back side of remote control marked with " OPEN " as shown in the fig. Push out the cover of battery box in the direction of the arrow.
2. Replace 2 x AAA (1.5V) batteries, making sure that the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery box.



Note:

- During operation, point the remote control signal sender at the receiving window on the indoor unit.
- The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.
- Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; the remote control should be close to indoor unit during operation.
- Replace new batteries of the same model when replacement is required.
- When you don't use remote control for a long time, please remove the batteries.
- If the display on remote control is fuzzy or there's no display, please replace batteries.

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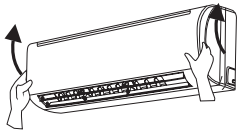
Cleaning and Maintenance

Clean filter

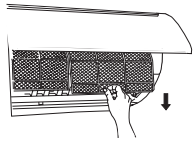
1 Open panel

Pull and open the panel to the angle shown in figure 2.



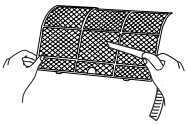
2 Remove filter

Remove the filter as indicated in the fig 2.



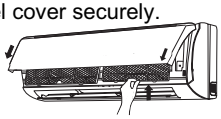
3 Clean filter

- Use a vaccum cleaner or water to clean the filter
- When the filter is very dirty, use water (below 45℃) to clean and then put it in a shady and cool place to dry naturally.



4 Install filter

Install the filter and then close the panel cover securely.



Note:

- The filter should be cleaned every three months. If there is much dust in the operation environment, check and clean more frequently.
- After removing the filter, do not touch fins to avoid injury.
- Do not use fire or a hair dryer to dry the filter to avoid deformation or fire hazard.

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Cleaning and Maintenance

Checking before use in season

1. Check whether air inlets and air outlets are blocked.
2. Check whether circuit breaker, plugs and sockets are in good condition.
3. Check whether filter is clean.
4. Check whether mounting bracket for outdoor unit is damaged or corroded. If yes, please contact your dealer.
5. Check whether drainage pipe is damaged.

Checking after season

1. Disconnect power supply.
2. Clean filter and indoor unit's panel.
3. Check whether mounting bracket for outdoor unit is damaged or corroded. If yes, please contact your dealer.

Notice for recovery

1. Many packing materials are recyclable materials. Please dispose them in appropriate recycling unit.
2. If you want to dispose the air conditioner, please contact local dealer or consultant service center for the correct disposal method.

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Malfunction analysis

Troubleshooting

Please check below items before asking for maintenance. If the malfunction still can't be eliminated, please contact local dealer or qualified professionals.

Phenomenon	Check items	Solution
Indoor unit can't receive remote controller's signal or remote controller has no action.	• Whether it's interfered severely (such as static electricity,stable voltage)?	• Pull out the plug. Reinsert the plug after about 3min, and then turn on the unit again.
	• Whether remote controller is within the signal receiving range?	• Signal receiving range is 8m.
	• Whether there are obstacles?	• Remove obstacles.
	• Whether remote controller is pointing at the receiving window?	• Select proper angle and point the remote controller at the receiving window on indoor unit.
	• Is sensitivity of remote controller low; fuzzy display and no display?	• Check the batteries. If the power of batteries is too low, please replace them.
	• No display when operating remote controller?	• Check whether remote controller appears to be damaged. If yes, replace it.
	• Fluorescent lamp in room?	• Take the remote controller close to indoor unit. • Turn off the fluoresent lamp and then try it again.
No air emitted from indoor unit	• Air inlet or air outlet of indoor unit is blocked?	• Eliminate obstacles.
	• Under heating mode, indoor temperature is reached to set temperature?	• After reaching to set temperature, indoor unit will stop blowing out air.
	• Heating mode is turned on just now?	• In order to prevent blowing out cold air, indoor unit will be started after delaying for several minutes, which is a normal phenomenon.

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Malfunction analysis

Phenomenon	Check items	Solution
Air conditioner can't operate	• Power failure?	• Wait until power recovery.
	• Is plug loose?	• Reinsert the plug.
	• Circuit break trips off or fuse is burnt out?	• Ask professional to replace circuit break or fuse.
	• Wiring has malfunction?	• Ask professional to replace it.
	• Unit has restarted immediately after stopping operation?	• Wait for 3min, and then turn on the unit again.
	• Whether the function setting for remote controller is correct?	• Reset the function.
Mist is emitted from indoor unit's air outlet	• Indoor temperature and humidity is high?	• Because indoor air is cooled rapidly. After a while, indoor temperature and humidity will be decrease and mist will disappear.
Set temperature can't be adjusted	• Unit is operating under auto mode?	• Temperature can't be adjusted under auto mode. Please switch the operation mode if you need to adjust temperature.
	• Your required temperature exceeds the set temperature range?	• Set temperature range: 16℃ ~30℃ .
Cooling (heating) effect is not good.	• Voltage is too low?	• Wait until the voltage resumes normal.
	• Filter is dirty?	• Clean the filter.
	• Set temperature is in proper range?	• Adjust temperature to proper range.
	• Door and window are open?	• Close door and window.

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Malfunction analysis

Phenomenon	Check items	Solution
Odours are emitted	• Whether there's odour source, such as furniture and cigarette, etc.	• Eliminate the odour source. • Clean the filter.
Air conditioner operates normally suddenly	• Whether there's interference, such as thunder, wireless devices, etc.	• Disconnect power, put back power, and then turn on the unit again.
Outdoor unit has vapor	• Heating mode is turned on?	• During defrosting under heating mode, it may generate vapor, which is a normal phenomenon.
"Water flowing" noise	• Air conditioner is turned on or turned off just now?	• The noise is the sound of refrigerant flowing inside the unit, which is a normal phenomenon.
Cracking noise	• Air conditioner is turned on or turned off just now?	• This is the sound of friction caused by expansion and/or contraction of panel or other parts due to the change of temperature.

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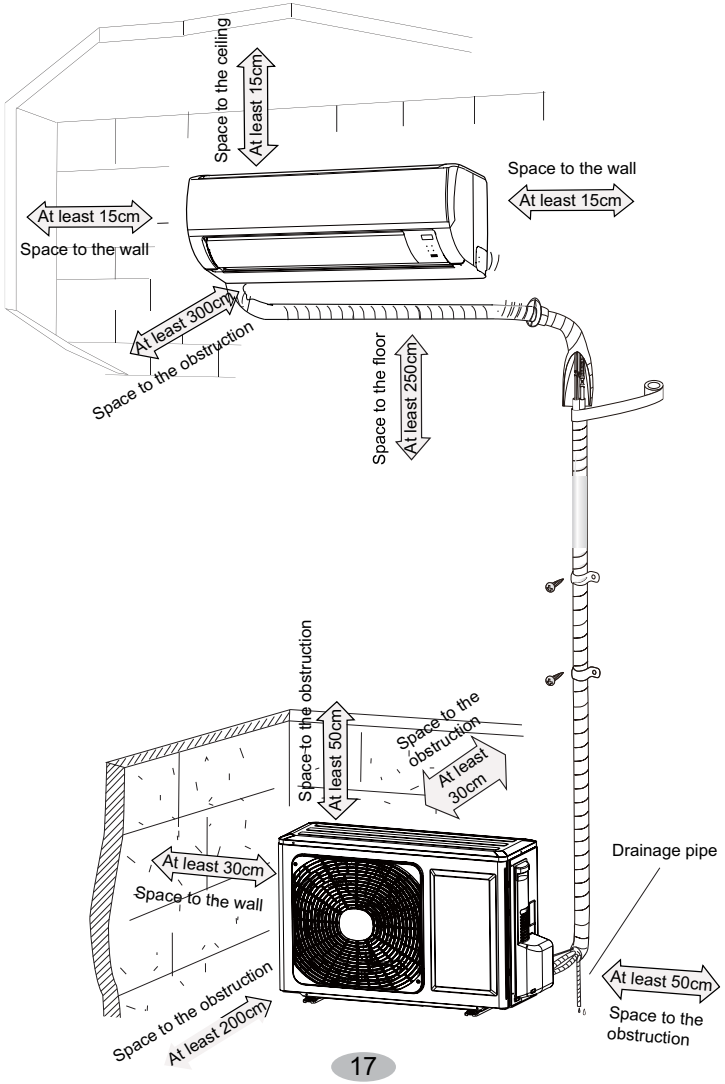
Installation dimensions



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Tools for installation

1 Level meter	2 Screw driver	3 Impact drill
4 Drill head	5 Pipe expander	6 Torque wrench
7 Open-end wrench	8 Pipe cutter	9 Leakage detector
10 Vacuum pump	11 Pressure meter	12 Universal meter
13 Inner hexagon spanner		14 Measuring tape

Note:

- Please use qualified engineer for installation.

Selection of installation location

Basic requirement

Installing the unit in the following places may cause malfunction.
If it is unavoidable, please consult the local dealer:

1. The place has strong heat sources, vapors, flammable or explosive gas, or volatile objects spread in the air.
2. The place has high-frequency devices (such as welding machines, medical equipment).
3. The place near a coastal area.
4. The place has oil or fumes in the air
5. The place has sulfureted gas.
6. Other places with special circumstances.
7. The appliance should not be installed inside a bathroom or wet room.

Indoor unit

1. There should be no obstruction near the air inlet and air outlet.
2. Select a location where the condensation water can be dispersed easily and will not affect other people.
3. Select a location which is convenient to connect the outdoor unit and near the power socket.
4. Select a location which is out of reach of children.
5. The location should be able to withstand the weight of indoor unit and won't increase the noise and vibration.
6. The appliance must be installed 2.5m above floor.
7. Don't install the indoor unit above another electric appliance.
8. Keep the unit clear of fluorescent lamps.

Outdoor unit

1. Select a location where the noise and outflow air emitted by the outdoor unit will not affect neighbours.
2. The location should be well ventilated and dry, in which the outdoor unit won't be exposed directly to sunlight or strong wind.
3. The location should be able to withstand the weight of outdoor unit.
4. Make sure that the installation follows the requirement of the dimension diagram.
5. Select a location which is out of reach of children and far away from animals or plants.If it is unavoidable, please add a fence or cage for safety purposes.

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Requirements for electrical connection

Safety precaution

1. You must follow the electric safety regulations when installing the unit.
2. Use the correct power supply according to the specification.
3. Make sure the power supply matches with the requirement of the air conditioner Improper power supply will cause malfunction to the unit. Please use correct power supply cables for the air conditioner.
4. Properly connect the live wire, neutral wire and earth wire of power socket.
5. Be sure to cut off the power supply before proceeding any work related to electricity and service.
6. Do not power up the unit before completing the installation.
7. If the supply cable is damaged, it must be replaced by the manufacturer, its service agent or qualified engineer in order to avoid a hazard.
8. If the temperature of the refrigerant circuit is high, please keep the interconnection cable away from the copper tube.
9. The appliance shall be installed in accordance with national wiring regulations.
10. Installation must be performed in accordance with the local regulations. and by qualified engineer.

Earthing requirement

1. Air conditioners are the first class electrical appliances. It must be properly earthed with specialized grounding device by a professional. Please make sure it is always earthed effectively, otherwise it may cause electric shock.
2. The yellow-green wire in air conditioner is earth wire, which can't be used for other purposes.
3. The earthing resistance should comply with national electric safety regulations.
4. The appliance must be positioned so that the plug is accessible.
5. An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
6. Include a circuit breaker with suitable capacity, please note the following table. Circuit break should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

Air-conditioner	Circuit break capacity
09K、12K	16A (C Rated)
18K、24K	25A (C Rated)

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Installation of indoor unit

Step one: choosing installation location

Recommend the installation location to the client and then confirm it with the client.

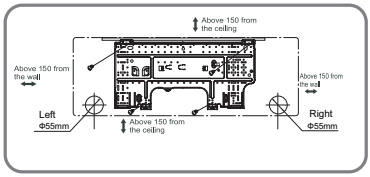
Step two: install wall-mounting frame

1. Hang the wall-mounting frame on the wall; adjust it in horizontal position with a spirit level meter and then point out the screw fixing holes on the wall.
2. Drill the screw fixing holes on the wall with impact drill (the specification of drill head should be the same as the plastic wall plug and then fit in the holes.
3. Fix the wall-mounting frame on the wall with tapping screws (ST4.2X25TA) and then check if the frame is firmly installed by pulling the frame. If the wall plug is loose, please drill another fixing hold nearby.

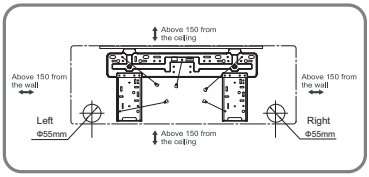
Step three: Drilling the hole for communication cable and condensing hose

1. Choose the position of piping hole according to the direction of outlet pipe. The position of piping hole should be a little lower than the wall-mounted frame, shown as below.

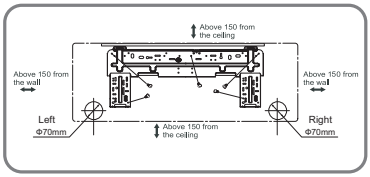
ECO916SD MK2 & ECO1216SD MK2



ECO1816SD MK2



ECO2416SD MK2



2. Open a piping hole with the diameter of Φ55/70 on the selected outlet pipe position. In order to drain water smoothly, slant the piping hole on the wall slightly downward to the outdoor side with the gradient of 5-10°.

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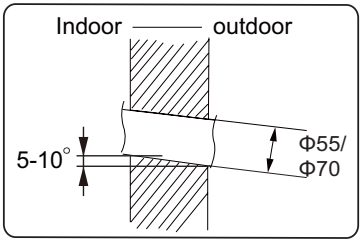
Installation of indoor unit

Piping hole	Model
Φ55	Cooling capacity < 6000W
Φ70	Cooling capacity ≥ 6000W

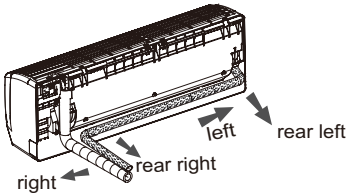


Note:

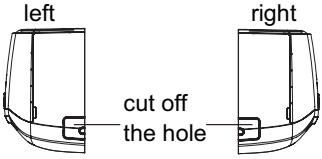
- Pay attention to dust prevention and take relevant safety measures when drilling the hole.

Step four: outlet pipe

1. The pipe can be led out in the direction of right, rear right, left or rear left.

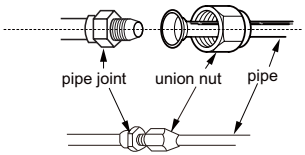


2. When select leading out the pipe from left or right, please cut off the corresponding hole on the bottom case.



Step five: connect the pipe of indoor unit

1. Aim the pipe joint at the corresponding bellmouth.
2. Pretightening the union nut with hand.
3. Please do not put any putty or PDF Tape on the threads it will react with the refrigerant and result to leaks and contamination of the refrigerant.



4. Adjust the torque force by referring to the following sheet. Place the open-end wrench on the pipe joint and place the torque wrench on the union nut. Tighten the union nut with torque wrench.

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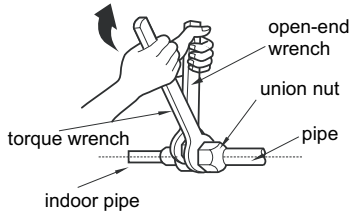
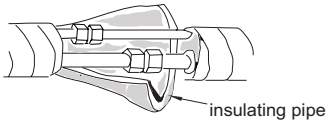
Installation of indoor unit



Hex nut diameter	Tightening torque (N·m)
Φ 6	15~20
Φ 9.52	30~40
Φ 12	40~55
Φ 16	60~65
Φ 19	70~75

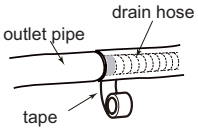
4. Wrap the indoor pipe and joint of connection pipe with insulating pipe, and then wrap it with tape.

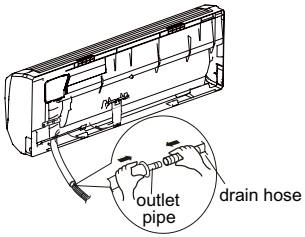


Step six: install drain hose

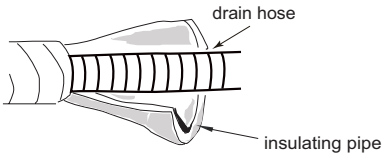
1. Connect the drain hose to the outlet pipe of indoor unit.

2. Bind the joint with tape.



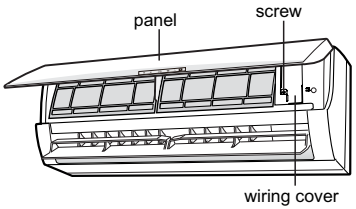


Note:
- Add insulating pipe in the indoor drain hose in order to prevent condensation.



Step seven: connect wire of indoor unit

1. Open the panel, remove the screw on the wiring cover and then take out the cover.



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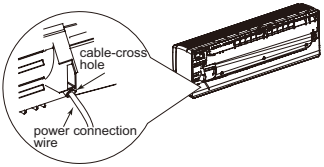
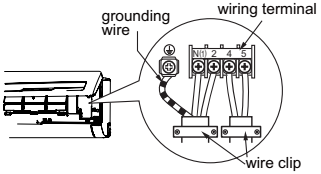
Installation of indoor unit

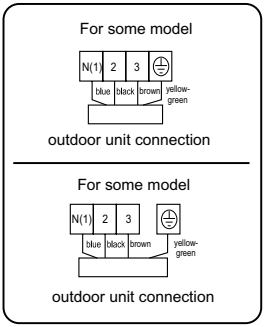
2. Make the power connection wire go through the cable-cross hole at the back of indoor unit and then pull it out from the front side.



3. Remove the wire clip; connect the power connection wire to the wiring terminal according to the color; tighten the screw and then fix the power connection wire with wire clip.



Note: the wiring terminal is for reference only, please refer to the actual one.



4. Put wiring cover back and then tighten the screw.

5. Close the panel.

Note:

- All wires of the indoor unit and outdoor unit should be connected by a professional.
- If the length of power connection wire is insufficient, please contact the supplier for a new one. Avoid extending the wire by yourself.
- For the air conditioner with plug, the plug should be reachable after finishing installation.
- For the air conditioner without plug, an circuit break must be installed in the line. The spur switch should be all-pole parting and the contact parting distance should be more than 3mm.

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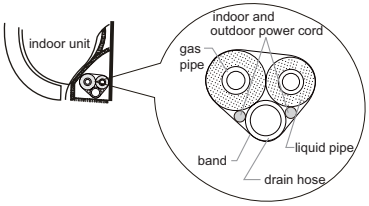
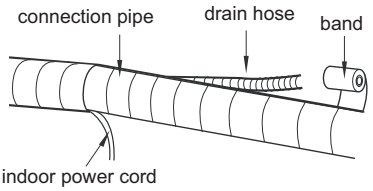
Installation of indoor unit

Step eight: band the piped

1. Banding the connection pipe, power cord and drain hose.



2. Reserve a certain length of drain hose and power cord for installation when binding them. When binding to a certain degree, separate the indoor power and then separate the drain hose.

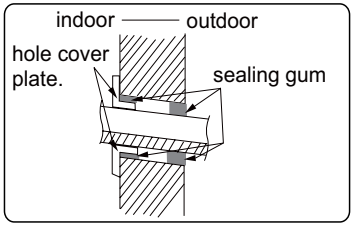


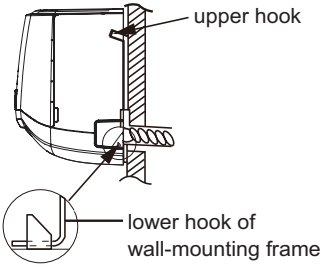
3. Bind them evenly.
4. The liquid pipe and gas pipe should be bound separately at the end.

Note:
- The power cord and control wire can't be crossed or winding.
- The drain hose should be bound at the bottom.

Step nine: hang the indoor unit

1. Pass pipe through the hole in the wall'
2. Hang the indoor unit on the wall-mounting frame.
3. Stuff the gap between pipes and wall hole with sealing gum.
4. Fix the hole cover plate.
5. Check if the indoor unit is installed firmly and closed to the wall.





Note:
- Do not bend the drain hose too excessively in order to prevent blocking.

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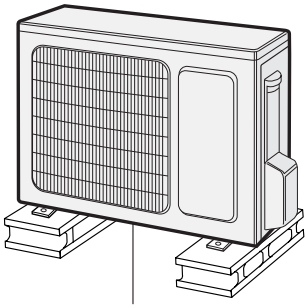
Installation of outdoor unit

Step one:

1. Select installation location according to the house structure.
2. Fix the support of outdoor unit on the selected location with expansion screws.

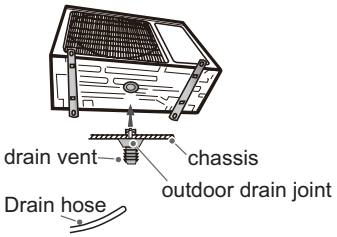
Note:

- Take sufficient protective measures when installing the outdoor unit.
- Make sure the support can withstand at least four times of the unit weight.
- The outdoor unit should be installed at least 2 cm above the floor in order to install drain joint.



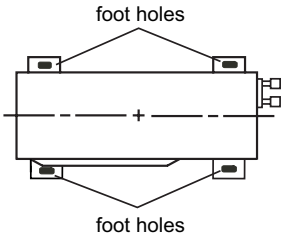
Step two: install drain joint (Only for cooling and heating unit)

1. Connect the outdoor drain joint into the hole on the chassis, as shown in the picture below.
2. Connect the drain hose into the drain vent.



Step three: fix outdoor unit

1. Place the outdoor unit on the support.
2. Fix the foot holes of outdoor unit with bolts.



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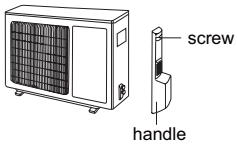
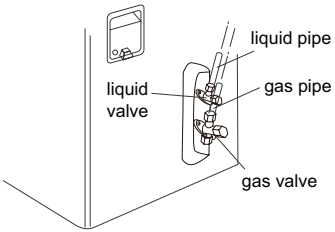
Installation of outdoor unit

Step four: connect indoor and outdoor pipes

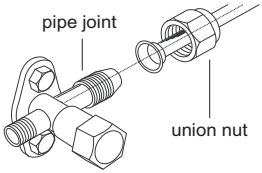
1. Remove the screw on the right handle of outdoor unit and then remove the handle.



2. Remove the screw cap of valve and aim the pipe joint at the bellmouth of pipe.



3. Pretightening the union nut with hand.

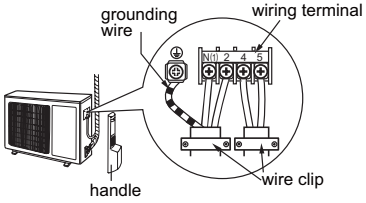


4. Tighten the union nut with torque wrench by referring to the sheet below.

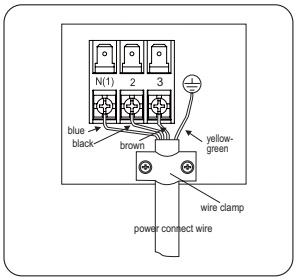
Hex nut diameter	Tightening torque (N·m)
Φ 6	15~20
Φ 9.52	30~40
Φ 12	40~55
Φ 16	60~65
Φ 19	70~75

Step five: connect outdoor electric wire

1. Remove the wire clip; connect the power connection wire and signal control wire (only for cooling and heating unit) to the wiring terminal according to the colour; fix them with screws.



Note: the wiring terminal is for reference only, please refer to the actual one.



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Installation of outdoor unit

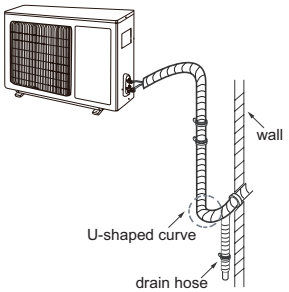
2. Fix the power connection wire and signal control wire with wire clip (only for cooling and heating unit).

Note:
- After tighten the screw, pull the power cord slightly to check if it is firm.
- Never cut the power connection wire to prolong or shorten the distance.

Step six: neaten the pipes

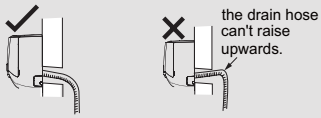
1. The pipes should be placed along the wall, bent reasonably and hidden possibly. Min. semidiameter of bending the pipe is 10cm.

2. If the outdoor unit is higher than the wall hole, you must set a U-shaped curve in the pipe before pipe goes into the room, in order to prevent rain from getting into the room.

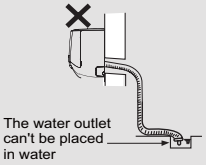


Note:

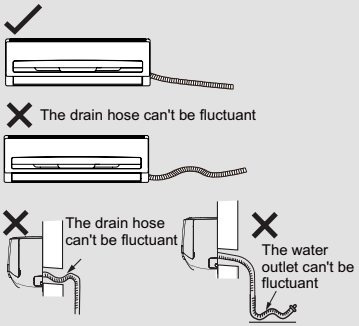
- The drain hose shouldn't be higher than the outlet pipe hole of the indoor unit.



- The water outlet can't be placed in water in order to drain smoothly.



- Slant the drain hose slightly downwards. The drain hose can't be curved, raised and fluctuant, etc.



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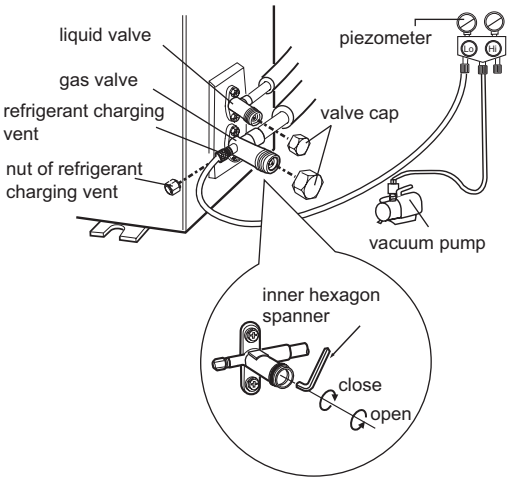
Vacuum pumping

Use vacuum pump

1. Remove the valve caps on the liquid valve and gas valve and the nut of refrigerant charging vent.
2. Connect the charging hose of piezometer to the refrigerant charging vent of gas valve and then connect the other charging hose to the vacuum pump.
3. Open the piezometer completely and operate for 10-15min to check if the pressure of piezometer remains in -0.1MPa.
4. Close the vacuum pump and maintain this status for 1-2min to check if the pressure of piezometer remains in -0.1MPa. If the pressure decreases, there may be leakage.
5. Rectify the leakage before open the gas and liquid valve.
6. Tighten the screw caps of valves and refrigerant charging vent.



Leakage detection

1. With leakage detector:
   Check if there is leakage with leakage detector.
2. With soap water:
   If leakage detector is not available, please use soap water for leakage detection. Apply soap water at the suspected position and keep the soap water for more than 3min. If there are air bubbles coming out of this position, there's a leakage.

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Check after installation

- Check according to the following requirement after finishing installation.

Items to be checked	Possible malfunction
Has the unit been installed firmly?	The unit may drop, shake or emit noise.
Have you done the refrigerant leakage test?	It may cause insufficient cooling (heating) capacity.
Is heat insulation of pipeline sufficient?	It may cause condensation and water dripping.
Is water drained well?	It may cause condensation and water dripping.
Is the voltage of power supplyaccord-ing to the voltage marked on the nameplate?	It may cause malfunction or damage the internal parts.
Is electric wiring and pipeline installed correctly?	It may cause malfunction or damage the internal parts.
Is the unit earthed securely?	It may cause electric leakage.
Does the power cord follow the speci-fication?	It may cause malfunction or damage the internal parts.
Is there any obstruction in the air inlet and outlet?	It may cause insufficient cooling (heating) capacity.
The dust and sundries caused during installation are removed?	It may cause malfunction or damage the internal parts.
The gas valve and liquid valve of connection pipe are open completely?	It may cause insufficient cooling (heating) capacity.

Test operation

1. Preparation of test operation

- The client approves the air conditioner.
- Specify the important notes for air conditioner to the client.

2. Method of test operation

- Connect the power, press ON/OFF button on the remote controller to start operation.
- Press MODE button to select AUTO, COOL, DRY, FAN and HEAT to check whether the operation is normal or not.
- If the ambient temperature is lower than 16℃ , the air conditioner can't start cooling.

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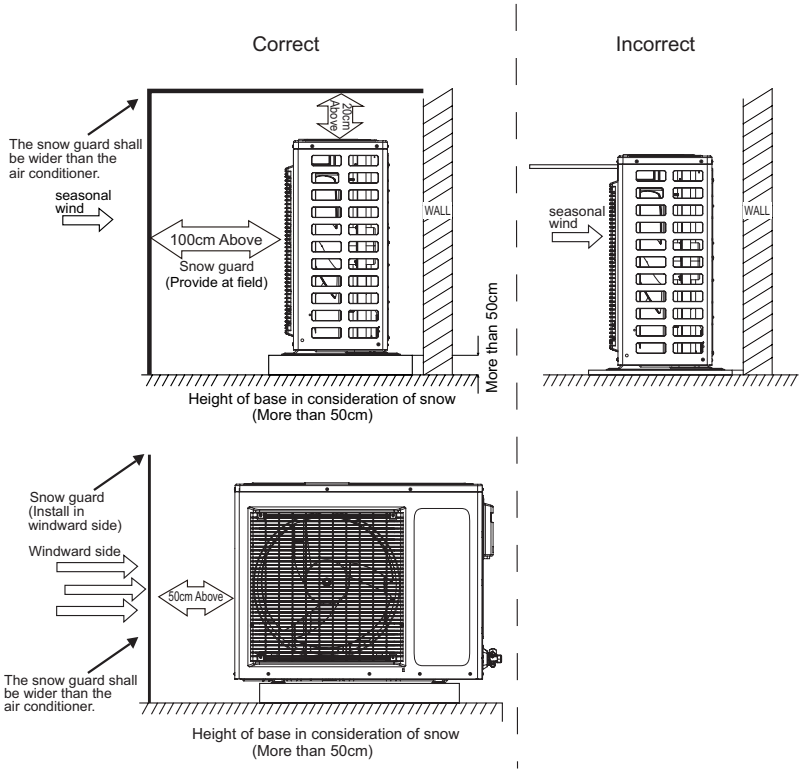
Install snow guard (Optional)

In consideration of snow during installation of outdoor units

Note: It is required to equip snow guard and a higher foundation base to prevent snow from covering air inlet and outlet.


Correct
Incorrect
The snow guard shall be wider than the air conditioner.
seasonal wind
20cm Above
100cm Above
Snow guard (Provide at field)
WALL
More than 50cm
Height of base in consideration of snow (More than 50cm)
seasonal wind
WALL
Snow guard (Install in windward side)
Windward side
50cm Above
The snow guard shall be wider than the air conditioner.
Height of base in consideration of snow (More than 50cm)

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Configuration of connection pipe

1. Standard length of connection pipe
   - 4m.

2.Min. length of connection pipe is 3m.

3.Max. length of connection pipe and max. high difference.

Cooling capacity	Max length of connec-tion pipe	Max height difference
9000Btu/h (2637W)	15	5
12000Btu/h (3516W)	20	10
18000Btu/h (5274W)	25	10
24000Btu/h (7032W)	25	10

4. The additional refrigerant oil and refrigerant charging required after prolonging connection pipe
   - After the length of connection pipe is prolonged for 10m at the basis of standard length, you should add 5grams of refrigerant oil for each additional 5m of connection pipe.
   - The calculation method of additional refrigerant charging amount (on the basis of liquid pipe):

     Additional refrigerant charging amount = prolonged length of liquid pipe × additional refrigerant charging amount per meter
   - When the length of connection pipe is above 5m, add refrigerant according to the prolonged length of liquid pipe. The additional refrigerant charging amount per meter is different according to the diameter of liquid pipe. See the following sheet.

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Configuration of connection pipe

Additional refrigerant charging amount for R410A

Diameter of connection pipe		Outdoor unit throttle	
Liquid pipe(mm)	Gas pipe(mm)	Cooling only(g/m)	Cooling and heating(g/m)
Φ6	Φ9.52 or Φ12	15	20
Φ6 or Φ9.52	Φ16 or Φ19	15	50
Φ12	Φ19 or Φ22.2	30	120
Φ16	Φ25.4 or Φ31.8	60	120

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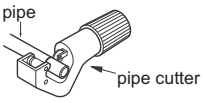
Pipe expanding method

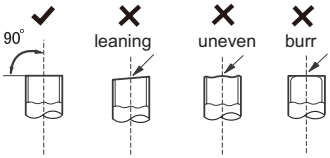
Note:

Improper pipe expanding is the main cause of refrigerant leakage. Please expand the pipe according to the following steps:

A: Cut the pipe

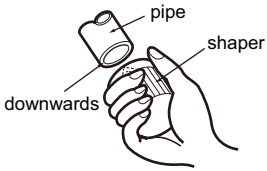
- Confirm the pipe length according to the distance of indoor unit and outdoor unit.
- Cut the required pipe with pipe cutter.





B: Remove the burrs

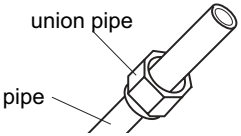
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.



C: Put on suitable insulating pipe

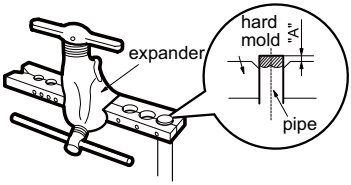
D: Put on the union nut

- Remove the union nut on the indoor connection pipe and outdoor valve; install the union nut on the pipe.



E: Expand the port

- Expand the port with expander.



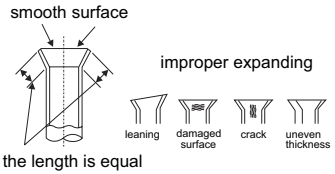
Note:

- "A" is different according to the diameter, please refer to the sheet below:

Outer diameter (mm)	A(mm)	
	Max	Min
Φ6 - 6.35(1/4")	1.3	0.7
Φ9.52(3/8")	1.6	1.0
Φ12-12.7(1/2")	1.8	1.0
Φ15.88(5/8")	3.0	2.4

F: Inspection

- Check the quality of expanding port. If there is any blemish, expand the port again according to the steps above.



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